

REMARKS

Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The position of the Office is that the recitation that the "separator is at least partially made of polypropylene or polyethylene" adds new matter to the claims. The Office states that the specification does not support the limitation "at least partially made of". However, the Office states that the specification provides support for the material of the separator "comprising" polypropylene or polyethylene.

The position of the Office is not entirely clear. Applicants do not believe that there is a material difference between the scope of a claim reciting that the separator "is at least partially made of" polypropylene or polyethylene and the scope of a claim reciting that the separator "comprises" polypropylene or polyethylene. Each claim includes separators made of polypropylene or polyethylene or polypropylene or polyethylene combined with another material. The recitation "at least partially made of" does not require that the separator include a material other than polypropylene or polyethylene. Notwithstanding that claims 1-9 as examined are believed to comply with the written description requirement of the first paragraph of 35 U.S.C. § 112, claims 1 and

5 have been to recite that the separator "comprises" polypropylene or polyethylene, as suggested by the Office. These amendments are not believed to require further search and/or consideration and are believed to be proper for entry.

Removal of the 35 U.S.C. 112, first paragraph, rejection of the claims is in order and is respectfully requested.

Claims 1, 4-5 and 8-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Oba (Japanese Patent Application Publication No. 2002-025526; hereinafter "Oba").

The Office cites Oba as disclosing a battery comprising a positive electrode, a negative electrode and not less than two kinds of separators which has a shutdown property where the shutdown temperatures of the separators are different by not less than 10°C. The positive electrode of Oba is identified as comprising LiCoO_2 , LiNiO_2 , $\text{LiNi}_y\text{Co}_{1-y}\text{O}_2$ or " $\text{LiMn}_2\text{O}_{1-y}\text{O}_2$ " (?). The Office states that Oba teaches that the separator comprises PE/PP and has a shutdown temperature in the range of 150-155°C (apparently based on Table 1).

The Office takes the position the claimed area contraction ratio at 120° of 15% or less and the difference between the film-breaking temperature and the shut-down temperature being 20° or

higher at the time when the temperature rises at 15°/min are inherent in the separator of Oba.

Applicants respectfully submit that the Office has not properly supported a position that the claimed area contraction ratio and the difference between the film-breaking temperature and the shut-down temperature are inherent in the separator of Oba. The Office has not provided any reasoning to support this position.

Moreover, the present invention itself is evidence that a separator which has a shutdown temperature of 162 °C or less would not inherently have these properties. First, if all separators having a shutdown temperature of 162 °C or less would inherently have an area contraction ratio at 120° of 15% or less and a difference between the film-breaking temperature and the shut-down temperature of 20° or higher at the time when the temperature rises at 15°/min, there would be no need to recite these limitations in the claims. As described on page 15, lines 15 to 21, of the specification of the present application, when a separator where the shut-down temperature of the separator is higher than 162°C is utilized, even when the area contraction ratio of the separator at 120°C is 15% or lower, there is a possibility of an abnormal rise in the temperature inside the battery due to the heat degeneration

of the positive electrode before the shut-down function takes place.

Second, the data in the application show that separators which meet the claimed shutdown temperature limitation do not necessarily meet the other claimed limitations. The attention of the Office is directed to Separators X', Y' and Z' in "Rising temperature Rate of 15°C/min" in Table 5. Separators X', Y' and Z' have a shut-down temperature of 162°C or less but have a difference between the film-breaking temperature and the shut-down temperature of 12°C or lower.

In view of the Office's failure to properly support a position of inherency, the 35 U.S.C. 102(b) and alternative 35 U.S.C. 103(a) rejections over Oba are improper and should be removed.

Regarding the obviousness of the claimed limitations, Oba does not disclose or suggest anything concerning the claimed limitations and there is nothing in the prior art to suggest that the limitations are result-effective limitations which would have been routinely optimized.

Claims 2-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oba. The Office notes that Oba does not teach a positive electrode active material of a mixture of lithium

manganese oxide and lithium cobalt oxide or lithium nickel oxide and the claimed weight ratios.

The position of the Office is that it would be obvious to a person of ordinary skill in the art to use a combination of lithium manganese oxide and lithium cobalt oxide or lithium nickel oxide since Oba teaches that each of the compounds is useful as a positive electrode active material. The Office also takes the position that the claimed weight ratios are a matter of routine optimization.

This rejection depends on the propriety of the rejection of claims 1 and 5 over Oba. Since the rejection of claims 1 and 5 has been shown to be improper, the rejection of claims 2-3 and 6-7 cannot stand.

Removal of the rejections of the claims is believed to be in order and is respectfully requested.

The foregoing is believed to be a complete and proper response to the Office Action dated November 28, 2007, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

PATENT APPLN. NO. 10/809,875
RESPONSE UNDER 37 C.F.R. § 1.116

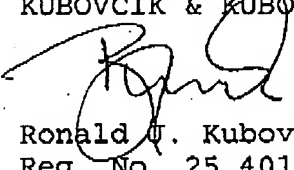
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In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 111833.

In the event any additional fees are required, please also charge our Deposit Account No. 111833.

Respectfully submitted,

KUBOVCIK & KUBOVCIK



Ronald T. Kubovcik
Reg. No. 25,401

Atty. Case No. MAM-041
Crystal Gateway 3
Suite 1105
1215 South Clark Street
Arlington, VA 22202
Tel: (703) 412-9494
Fax: (703) 412-9345
RJK/JBF